

CHAPTER 17

EAR, NOSE AND THROAT

17.1 ABSCESS, RETROPHARYNGEAL

J39.0

DESCRIPTION

An infective process of the retropharyngeal space either due to:

- » abscess formation in a retropharyngeal lymph node (lymphadenitis),
- » rarely, extension of infection from surrounding tissues, or
- » rarely, local injury.

Always consider cold abscess of TB as a possible cause.

DIAGNOSTIC CRITERIA

Clinical

- » In severe cases, stridor and difficulty in breathing,
- » more commonly, fever with dysphagia and drooling,
- » may have extension of the neck, or torticollis and,
- » swelling, usually in the midline of posterior pharyngeal wall.

Investigations

- » Lateral X-ray of the neck may show the retropharyngeal space to be more than one-half of the width of the adjacent vertebral bodies when the neck is extended; air may be seen in the retropharynx and there is loss of the cervical lordosis.
- » Blood cultures.

GENERAL AND SUPPORTIVE MEASURES

- » Referral to ENT for surgical drainage of abscesses.
- » Protect the airway.
- » Ensure adequate hydration, either IV fluids or by NGT.

MEDICINE TREATMENT

Empirical antibiotic therapy

- » Initiate antibiotic treatment immediately even if transfer of the patient is anticipated.
- » Adjust antibiotic therapy based on culture results, if available.
- » Early cases may be treated with antibiotic therapy alone.
- Amoxicillin/clavulanic acid, IV, 25 mg/kg/dose of the amoxicillin component 8 hourly (do not exceed 10 mg/kg/day of the clavulanic acid component).

As soon as there is a response and patient can tolerate oral medication:

- Amoxicillin/clavulanic acid, oral, 45 mg/kg/dose of amoxicillin component, 12 hourly for 14 days (amoxicillin/clavulanic acid in a ratio of 14:1).
 - Maximum dose of amoxicillin component: 1.5 g 12 hourly.
 (See annexure 1: Amoxicillin/Clavulanic weight band dosing table)

LoE III[†]

Note: *S. aureus* and *M. tuberculosis* are also possible aetiological agents. Adjust antibiotics once culture and sensitivity results are available.

Penicillin allergy:

See Chapter 25: Drug Allergies, section 25.4.1: Allergies to penicillins.

For pain and fever:

- Paracetamol, oral, 15 mg/kg/dose 6 hourly as required.

REFERRAL

- » All children.

17.2 TONSILLITIS AND PHARYNGITIS

J03

See Primary Healthcare Standard Treatment Guidelines and Essential Medicines List, Chapter 19: Ear, Nose and Throat Conditions, section 19.6: Tonsillitis and pharyngitis.

17.3 TONSILLITIS, COMPLICATED (PERITONSILLAR CELLULITIS, PERITONSILLAR ABSCESS)

J03.9

DESCRIPTION

An infective process involving the tonsils with spread of infection into the adjacent tissue. It must be differentiated from hypertrophy of the tonsils without infection and a viral upper respiratory tract infection (these are associated with rhinorrhoea, nasal congestion and cough).

Local complications include peritonsillar abscess (quinsy) and parapharyngeal extension.

Systemic complications include glomerulonephritis, rheumatic fever and bacterial endocarditis.

DIAGNOSTIC CRITERIA

Clinical

- » Pyrexia, malaise.

- » Sore throat, dysphagia, drooling, trismus.
- » Enlarged, inflamed tonsils, often with superficial pus visible in crypts.
- » Earache (referred otalgia).
- » Tender and enlarged cervical lymph nodes.

Signs of peritonsillar abscess/cellulitis:

- » Usually unilateral.
- » Soft palate and uvula on the infected side are oedematous and displaced medially towards the uninvolved side.
- » Trismus.

Investigations

- » Blood microscopy, culture and sensitivity.

GENERAL AND SUPPORTIVE MEASURES

- » If necessary, maintain the airway.

MEDICINE TREATMENT

Empiric antibiotic therapy

- » Initiate antibiotic treatment immediately even if transfer of the patient is anticipated.
- » Adjust antibiotic therapy based on culture results, if available.

Early complications may be treated with antibiotic therapy alone.

- Amoxicillin/clavulanic acid, IV, 25 mg/kg/dose of the amoxicillin component 8 hourly (do not exceed 10 mg/kg/day of the clavulanic acid component).

As soon as there is a response and patient can tolerate oral medication:

- Amoxicillin/clavulanic acid, oral, 45 mg/kg/dose of amoxicillin component, 12 hourly for 10 days (amoxicillin/clavulanic acid in a ratio of 14:1).
 - Maximum dose of amoxicillin component: 1.5 g 12 hourly.(See annexure 1: Amoxicillin/Clavulanic weight band dosing table)

LoE III[†]

Adjust antibiotics once sensitivity results are obtained.

Penicillin allergy:

See Chapter 25: Drug Allergies, section 25.4.1: Allergies to penicillins.

For pain and fever:

- Paracetamol, oral, 15 mg/kg/dose 6 hourly as required.

See Chapter 20: Pain Control, section 20.1.1: Management of pain.

REFERRAL

- » Tonsillitis with local complications not responding to adequate treatment.
- » All cases where drainage may be required and is not available locally.

17.3.1 ACUTE BACTERIAL TRACHEITIS

J04.1

DESCRIPTION

An acute infective process characterised by marked subglottic oedema, with ulceration, erythema, pseudomembranous formation on the tracheal surface, and thick, mucopurulent secretions that frequently obstructs the lumen. Commonly due to *S. aureus*.

DIAGNOSTIC CRITERIA**Clinical**

- » Severely ill and toxic with airway obstruction and respiratory distress.
- » Insidious onset, brassy cough, neck pain, dysphagia, no drooling.
- » Associated co-infection, e.g. pneumonia.

Investigations

- » Raised white cell count with left shift.
- » Lateral neck X-ray: hazy tracheal air column.
- » Upper airway endoscopy.
- » Bacterial cultures on blood and pharyngeal secretions.

GENERAL AND SUPPORTIVE MEASURES

- » Intubate and suction secretions if features of severe upper airway obstruction are present.
- » Mechanical ventilation if associated pneumonia present.

MEDICINE TREATMENT

- Ceftriaxone, IV, 80 mg/kg once daily.

OR

If one month old or younger:

- Cefotaxime, IV, 50 mg/kg/dose, 6–8 hourly.

Adjust antibiotics according to sensitivity results.

For pain and fever:

- Paracetamol, oral, 15 mg/kg/dose 6 hourly.

Give 3 doses of corticosteroids to intubated patients prior to extubation:

- Dexamethasone, IV, 0.15 mg/kg/dose 8 hourly.

REFERRAL

- » All cases requiring intubation.

17.4 EPISTAXIS (NOSE BLEED)

R04.0

DESCRIPTION

Nose bleeds may be caused by local or systemic diseases, or local trauma, especially nose picking and contact sports. It occurs from an area anterior and inferior on the nasal septum. Recurrent nose bleeds should alert one to possible systemic diseases, e.g. hypertension and bleeding tendency. Persistent or severe bleeds may require hospital care.

Complications include anaemia and hypovolaemic shock.

DIAGNOSTIC CRITERIA

- » History of spontaneous and/or recurrent nose bleeds.
- » Underlying problems include bleeding disorders and local intranasal pathology.
- » Examine child for nasal lesions and signs of haematological disease and coagulopathies.

GENERAL AND SUPPORTIVE MEASURES

Digital pressure

- » Squeeze the nasal wings (alae) of the nose between the thumb and forefinger to apply pressure to the nasal septum and maintain pressure for about 10 minutes.
- » The child should sit up and lean forward so as not to swallow the blood, and should breathe through the mouth.
- » If digital pressure fails, remove blood clots from the nose. The child may be able to do this by blowing his/her nose.

MEDICINE TREATMENT

Vasoconstrictor

If digital pressure fails:

- Oxymetazoline 0.025%, nose drops, instil 1–2 drops into the affected nostril(s) and repeat digital pressure as above.

Nasal pack

If bleeding continues and appears to originate from the anterior nasal cavity, pack the nasal cavity (rather than the apex) with cotton gauze tape impregnated with:

- BIPP (bismuth iodoform paraffin paste).

Apply topical anaesthesia to packing material:

- Lidocaine spray 2% solution.
 - Do not exceed 3 mg/kg/dose applied topically.

Anaemia

If symptomatic anaemia:

- » haemoglobin is less than 8 g/dL and/or haematocrit is < 25% with ongoing epistaxis, or
- » there is an underlying disorder in which severe re-bleeding is likely.
- Packed red cells, IV, 10–15 mL/kg over 2 to 4 hours.

Treat the underlying disorder appropriately.

REFERRAL

- » Epistaxis caused by a serious underlying disorder.
- » Epistaxis that is not controlled by the above measures.
- » Recurrent epistaxis.

17.5 ACUTE MASTOIDITIS

H70.9

DESCRIPTION

A serious condition involving acute infections of the mastoid antrum that could spread to the adjacent brain and could occur secondary to an ear infection. Usually due to bacterial infections but tuberculosis should also be considered.

DIAGNOSTIC CRITERIA**Clinical**

- » Fever, severe pain, hearing impairment, tenderness over mastoid antrum.
- » Swelling in post-auricular area. Pinna is pushed down and forward.
- » Tympanic membrane is often perforated with otorrhoea.
- » Occasionally, pus breaks through the mastoid tip and forms an abscess in the neck.
- » If seizures, headache, loss of consciousness or neck stiffness, do CT scan of brain.

Investigations

- » CT scan of brain to exclude intracranial spread.
- » Collect blood and pus for Gram stain, microscopy, culture and sensitivity tests before initiation of antibiotic therapy.

GENERAL AND SUPPORTIVE MEASURES

- » Dry mopping of the external auditory canal.

MEDICINE TREATMENT**Empiric antibiotic therapy**

- Ceftriaxone, IV, 100 mg/kg once daily.

Note: Adjust antibiotic therapy based on culture results or if response to antibiotic therapy is unsatisfactory.

As soon as there is a response and patient can tolerate oral medication:

- Amoxicillin/clavulanic acid, oral, 45 mg/kg/dose of amoxicillin component, 12 hourly (amoxicillin/clavulanic acid in a ratio of 14:1).
 - Maximum dose of amoxicillin component: 1.5 g 12 hourly.
 (See annexure 1: Amoxicillin/Clavulanic weight band dosing table)

LoE III ¹

Total duration of therapy: at least 14 days.

For pain and fever:

- See Chapter 20: Pain Control, section 20.1.1: Management of pain.

REFERRAL

Urgent

- » To ENT surgeon after initiation of antibiotics.

17.6 OTITIS EXTERNA

H60.9

See Primary Healthcare Standard Treatment Guidelines and Essential Medicines List, 2018, Chapter 19: Ear, Nose and Throat Conditions, section: 19.4.1 Otitis externa.

REFERRAL

- » Suspected necrotising otitis externa: to ENT specialist.

17.7 OTITIS MEDIA, ACUTE (AOM)

H66.9

DESCRIPTION

- » Inflammation of the middle ear that may be complicated by perforation and a purulent ear discharge, which usually resolves spontaneously within 14 days. Acute otitis media (AOM) needs to be distinguished from otitis media with effusion (OME), which is NOT treated with antibiotics.

DIAGNOSTIC CRITERIA

- » Frequently preceded by a viral upper respiratory tract infection.
- » Pain (earache; not due to referred pain), irritability and fever.
- » Acute purulent otorrhoea may develop with associated relief of otalgia.

OR at least one of the following:

- » Distinct fullness or bulging of the tympanic membrane.
- » Marked redness of the tympanic membrane.

Signs and Symptoms	Otitis Media with Effusion	Acute Otitis Media
Impaired hearing	Mild-to-moderate	Mild-to-moderate
Pain (otalgia)	No	Moderate-to-severe
Tenderness	No	No
Purulent drainage (otorrhoea)	No	Only after perforation of tympanic membrane
Bacterial infection	No	Yes
Systemic symptoms (i.e. fever, malaise)	No	Yes

GENERAL AND SUPPORTIVE MEASURES

- » Avoid getting the inside of the ear wet.

MEDICINE TREATMENT

- Amoxicillin, oral, 45 mg/kg/dose 12 hourly for 10 days.
 - Maximum dose: 1.5 g 12 hourly.

LoE ^P

Note: For poor response to amoxicillin therapy, or in patients who have received amoxicillin in the last 30 days:

- Amoxicillin/clavulanic acid, oral, 45 mg/kg/dose of amoxicillin component, 12 hourly for 10 days (amoxicillin/clavulanic acid in a ratio of 14:1).
 - Maximum dose of amoxicillin component: 1.5 g 12 hourly.
 (See annexure 1: Amoxicillin/Clavulanic weight band dosing table)

LoE III^{1, P, 3}

For pain and fever:

- See Chapter 20: Pain Control, section 20.1.1: Management of pain.

REFERRAL

- » If symptoms persist despite appropriate antibiotic therapy, the patient shows severe toxicity or there is progression beyond the middle ear, refer to ENT specialist.

17.8 OTITIS MEDIA, WITH EFFUSION (OME)

H66.0

DESCRIPTION

A sequela of acute middle ear infection, an entrapment in the middle ear cleft of mucus or mucopus. There is an intact tympanic membrane, no otalgia, and no fever. May be associated with mild hearing loss and speech delay. May be associated with clumsiness.

DIAGNOSTIC CRITERIA

» Bubbles or air-fluid interfaces.

OR at least two of following:

- » Abnormal colour of tympanic membrane: white, yellow, amber, blue.
- » Opacification not due to scarring and retraction.
- » Decreased or absent mobility of tympanic membrane.

GENERAL AND SUPPORTIVE MEASURES

- » Advise parents and caregivers that most cases resolve spontaneously with no medication required. Review after 12 weeks.

Antibiotics and antihistamines are not indicated.

REFERRAL

- » All patients with OME with delayed speech development or poor school performance require referral.
- » All cases lasting longer than 3 months should be referred to Audiology for hearing testing and ENT specialist review.

17.9 OTITIS MEDIA, CHRONIC, SUPPURATIVE

H66.1–3

DESCRIPTION

A purulent discharge from the middle ear with perforation of the ear drum for more than two weeks.

Note: TB is a rare cause of a chronic discharge from the ear.

Persistent or chronic otitis media is also associated with HIV infection in children.

GENERAL AND SUPPORTIVE MEASURES

- » Dry mopping is the most important part of the treatment. It should be demonstrated to the child's caregiver or patient if old enough.
- » Continue with dry mopping for 4 weeks.
- » Then dry the canal as much as possible with paper towel twisted into a wick.
- » Then frequently instil acetic acid 2% ear drops, 4 drops, 4 times daily for 5 days.
- » Avoid getting the inside of the ear wet during swimming and bathing by using earplugs only during these activities.

MEDICINE TREATMENT

- Fluoroquinolone ear drops, e.g.:
 - Ciprofloxacin ear drops, instil 2 drops, 8 hourly into the affected ear after dry mopping.

REFERRAL**Emergency**

- » All with a suspected intracranial complication.

Elective (referral to ENT specialist)

- » Suspected cholesteatoma.
- » Persistent tympanic membrane perforation.
- » No improvement after 4 weeks.
- » Further antimicrobial choices should be based on definitive diagnosis based on culture and sensitivity.

17.10 RHINITIS, ALLERGIC/ALLERGIC RHINOSINUSITIS

J30.4

DESCRIPTION

Recurrent inflammation of the nasal mucosa due to hypersensitivity to inhaled allergens. May present with a running, itchy nose and eyes, and excessive sneezing ("runner") and/or with nasal obstruction ("blocker"). Look for the salute sign and allergic "shiners". Recurrent symptoms or symptoms lasting longer than 14 days. This diagnosis is unusual in patients under 2 years of age; similar symptoms in this age group are most likely due to the common cold.

GENERAL AND SUPPORTIVE MEASURES

- » Avoid allergens and irritants.
- » Consider other allergic conditions such as asthma and allergic conjunctivitis, see Primary Healthcare Standard Treatment Guidelines and Essential Medicines List, Chapter 18: Eye Conditions, section 18.1.1: Conjunctivitis, allergic.

MEDICINE TREATMENT

For patients whose symptoms affect their quality of life:

- Corticosteroid aqueous nasal solution, e.g.:
 - Fluticasone, 50 mcg, 1 spray into each nostril daily. (Children > 12 years old, 2 sprays in each nostril daily.)

During periods of exacerbation of symptoms, a short course of non-sedating antihistamine can help, e.g.:

- Cetirizine, oral, as a single dose at night if the predominant symptoms are sneezing, nasal itching and rhinorrhoea:
 - Children 3–12 years: 5 mg.
 - Children older than 12 years: 10 mg.

17.11 RHINOSINUSITIS, ACUTE BACTERIAL (ABRS)

J01

DESCRIPTION

Inflammation or infection of one or more of the sinuses that occurs most often after a viral infection or with allergic rhinitis.

DIAGNOSTIC CRITERIA

Child with an acute upper respiratory tract infection presenting with:

- » persistent illness (nasal discharge, facial pain/pressure, or daytime cough lasting more than 10 days without improvement), a worsening course (worsening or new onset of nasal discharge, daytime cough, or pain/fever after initial improvement),
OR
- » severe onset (concurrent fever [temperature $\geq 39^{\circ}\text{C}$], pain and purulent nasal discharge for at least 3 consecutive days).

GENERAL AND SUPPORTIVE MEASURES

- » Steam inhalation to liquefy and remove secretions blocking the nose.

MEDICINE TREATMENT

For infection:

- Amoxicillin, oral, 45 mg/kg/dose 12 hourly for 10 days.
 - Maximum dose: 1.5 g 12 hourly.

Note: For poor response to amoxicillin therapy, or in patients who have received amoxicillin in the last 30 days:

- Amoxicillin/clavulanic acid, oral, 45 mg/kg/dose of amoxicillin component, 12 hourly for 5–10 days (amoxicillin/clavulanic acid in a ratio of 14:1).
 - Maximum dose of amoxicillin component: 1.5 g 12 hourly.
 (See annexure 1: Amoxicillin/Clavulanic weight band dosing table)

LoE III^{1,4}

For pain and fever:

- See Chapter 20: Pain Control, section 20.1.1: Management of pain.

If allergic rhinitis is suspected, see section 17.10: Rhinitis, allergic/allergic rhinosinusitis.

17.12 SINUSITIS, COMPLICATED

J32.9

DIAGNOSTIC CRITERIA**Clinical**

- » Signs and symptoms of complications:
 - > Peri-orbital swelling and fever.

- » Signs of meningeal irritation:
 - > Neck stiffness, positive Kernig's and Brudzinski's signs.
- » Signs of increased intracranial pressure:
 - > Hypertension, bradycardia, papilloedema and headache.
- » Signs of involvement of orbital structures:
 - > Periorbital oedema, erythema, chemosis, proptosis, vision loss and ophthalmoplegia.
- » Signs of brain involvement:
 - > Neurological signs, ataxia, paresis, paralysis, convulsions and altered level of consciousness.

Investigations

- » CT scan of brain, sinuses and orbits may show opacities and complications.
- » CT scan will show if there is involvement of intracranial structures, e.g. brain abscess and intraorbital involvement.
- » Pus, CSF and blood for culture and sensitivity tests. Microscopy and Gram-staining of pus and CSF specimens may give some indication of the micro-organism(s) involved.

MEDICINE TREATMENT

Empiric antibiotic therapy

- » Initiate empiric antibiotic therapy and reassess as soon as culture and sensitivity results become available or if there is no clinical improvement within 48–72 hours.
- Ceftriaxone, IV, 100 mg/kg once daily.

See Chapter 16: Eye Conditions, section 16.13: Preseptal and orbital cellulitis.

As soon as there is a response and patient can tolerate oral medication:

- Amoxicillin/clavulanic acid, oral, 45 mg/kg/dose of amoxicillin component, 12 hourly (amoxicillin/clavulanic acid in a ratio of 14:1).
 - Maximum dose of amoxicillin component: 1.5 g 12 hourly.
 (See annexure 1: Amoxicillin/Clavulanic weight band dosing table)

LoE III^a

Total duration of therapy: 14 days.

Penicillin allergy:

See Chapter 25: Drug Allergies, section 25.4.1: Allergies to penicillins.

For pain and fever:

- Paracetamol, oral, 15 mg/kg/dose 6 hourly as required.

REFERRAL**Urgent**

- » Spread of infection to eye/orbital structures or intracranial structures/brain.

References

- ¹ Brink AJ, Cotton MF, Feldman C, Finlayson H, Friedman RL, Green R, et al. Recommendations – Updated recommendations for the management of upper respiratory tract infections in South Africa. SAMJ. 2015; 105(5):345-352.
- ² Hoberman A, et al. Shortened Antimicrobial Treatment for Acute Otitis Media in Young Children. NEJM. 2016; 375:2446-2456.
- ³ Lieberthal AS, et al. Clinical Practice Guideline: The Diagnosis and Management of Acute Otitis Media. American Academy of Pediatrics. Pediatrics. 2013; 131:e964-e999.
- ⁴ Wald ER, et al. Clinical Practice Guideline for the Diagnosis and Management of Acute Bacterial Sinusitis in Children Aged 1–18 Years. American Academy of Pediatrics. 2013;132:e262-e280.